ROCKS and MINERALS

PUBLISHED MONTHLY

Edited and Published by PETER ZODAC

1939 OCTOBER

Contents For October, 1939

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Entered as second-class matter September 13, 1926, at the Post Office at Peekskill, N. Y., under the Act of March 3, 1879.

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Specially written articles (as contributions) are desired.

Subscription price $2.00 a year; Current numbers, 25c a copy. No responsibility is assumed for subscriptions paid to agents and it is best to remit direct to the Publisher.

Issued on the 1st day of each month.

Authors alone are responsible for statements made and opinions expressed in their respective articles.

Chips from the Quarry

PETER ZODAC

IMPORTANCE OF LOCALITY

During the past few years, a large number of mineral collectors have sprung up throughout the country. These collectors will sooner or later be exchanging specimens with others or even selling some of their duplicates. Whether they sell, exchange or give specimens away as gifts, there are three important factors that should guide them. First of all a specimen should be of good quality, then it should be accurately and fully labelled, and finally it should be well packed so as to reach the recipient in good condition.

In the May and July, 1939, issues of ROCKS AND MINERALS we stressed the poor quality of many specimens in collections. This time we shall stress labelling.

Whether a specimen is placed in a collector's cabinet or given to someone, a label giving the mineral's name and its LOCALITY should accompany it. If you are an amateur collector, especially a beginner, it is not expected that you can correctly identify every specimen you find. But it is expected that you would know the locality and state it on the label. The term "locality", however, does not seem to be understood nor its importance realized by many collectors. It is nothing more than the spot where a mineral is found, defined in as simple a manner as possible. The importance of a locality is that it makes a specimen of more value and interest, and also identifies it in many instances.

The following are a few illustrations of good locality labels:

Epidote
Croft Magnetite Mine, 6 miles N. of Peekskill, Westchester County, N. Y.

Tourmaline
Strickland Pegmatite Quarry, Collins Hill, 2½ miles N. E. of Portland, Middlesex County, Conn.

Allanite
N. W. Slope of the ("Bald") Friar Mt., 6 miles N. of Lowesville, Amherst County, Va.

Uraninite
Edwin Feldspar Corp. Mine, Headwaters Crabtree Creek, Yancey County, N. C.

Whenever a specimen is sent out, always be sure that a neatly, plainly written label, accompanies it. Use a good grade of white paper or a thin cardboard and write the information in ink or type it out if possible. Never use blotting paper nor tissue paper as we have so often observed.

We have come in contact with quite a number of collectors who either are very careless or else have no regard for localities. They can see the beauty in crystallized minerals, the value of gem crystals, or the importance of rare minerals but as for localities they ignore them completely.

Peter Zodac

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OCTOBER 1939

Vol. 14, No. 10

The Official Journal of the ROCKS and MINERALS ASSOCIATION

Whole No. 99

Gold Mining, Past and Present, Near Washington, D. C.

With Map Showing Locations of the Operating and Abandoned Mines

Prepared for ROCKS AND MINERALS by Titus Ulke

Some sixty years ago the writer saw a massive sheet of native gold, several feet long and a few inches wide, on a slab of milky quartz, taken out of a shallow prospecting pit located near the head of Rock Run and not far from Potomac, Md., above Great Falls, and about 15 miles northwest of Washington, D. C. This was the first time the writer, then a boy of 12 years, had observed gold ore mined, and the glamor of it all determined his course to study minerals and to become a mining engineer.

Montgomery Mine

In the vicinity of the above site the Montgomery Mine was started about 1875. Its approximate location is indicated on the accompanying map. Here, formerly, stood a Fraser and Chalmers 10-stamp mill, hoisting engine, boilers to each, two pans and settlers, a reverberatory furnace and a shaft with a considerable dump pile. It is reported that about $8,000 worth of gold was taken out of the mine, and that many fine nuggets, weighing up to 3 or 4 ounces, had been obtained from it.

Ford Mine

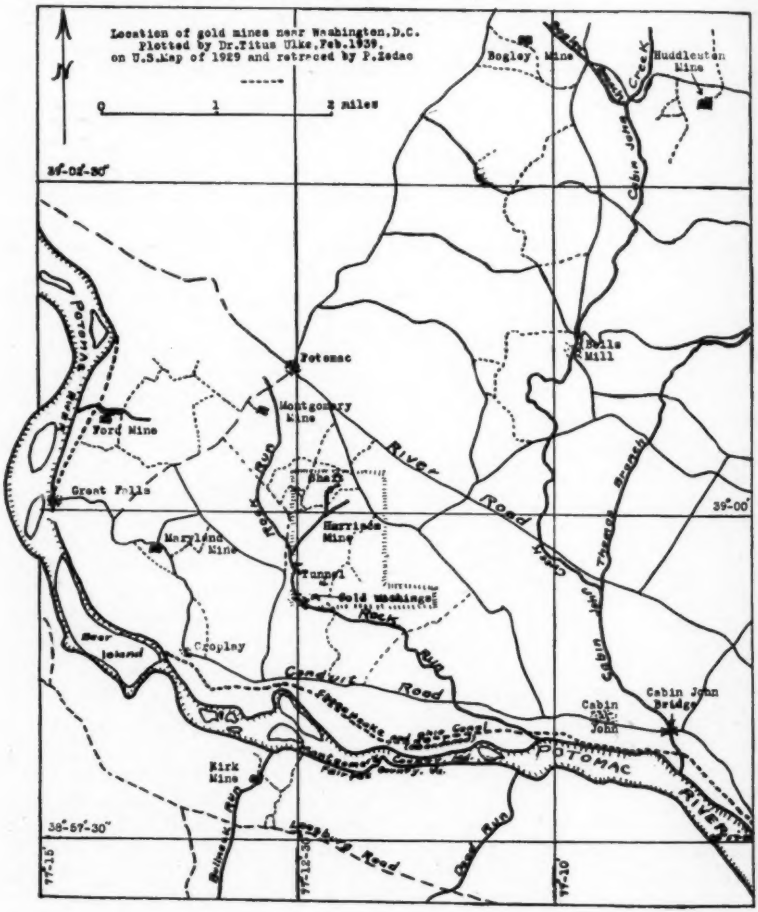
About 1890 the Ford Mine, located on a slope above the west bank of the C. & O. Canal and nearly a mile north of Great Falls, Md., was being opened up, and a mill started for treating the ore. So the writer hitch-hiked by wagon and canal boat to Great Falls, and secured a job at the mine. Here a vertical shaft had been sunk and two steeply inclined slopes driven along the vein-like orebody.

The surface ore, a honey-combed quartz known to miners as "hickory bark", scattered over weathered mica schist, panned from $10 to $20 to the ton in very fine free gold. The average saprolitic ore, assaying about $5 in gold to the ton, was extracted by mercury in a Wiswell mill, but the pyritic ore, obtained at depths below 10 or 15 feet from the ground surface, was not free-milling, and could not be extracted with profit by amalgamation. So the plant was soon shut down, though some thousands in gold had been taken out. It is but a ghostly wreck of rusted iron and rotting timber at the present time.

Kirk Mine

Some years later William Kirk, a Georgia miner, now of Mother Lode, California, operated a hydraulic, gold-gravel washing plant on Bull Neck Run, Va., some 10 miles west of Washington. Sufficient water was obtained at nearby Annie Gordon Falls,

carried about a mile in a flume to a head-pond located above the saprolitic ground then being washed, and piped down to a 6 inch "monitor", which directed the water upon the auriferous hillside. The tailings were carried down Bull Neck Run and banked along the Potomac River. Some good sized nuggets of gold were obtained. It was also whispered about that Kirk had discovered a pocket of very high grade ore, which he carefully concealed then, but took out about two years ago from the new Kirk Mine (see accompanying map), being operated as Virginia Mines, Inc., by Kirk and his son George, or their successors, and described by the writer in the December, 1937, number of ROCKS AND MINERALS, Vol. 12, No. 12, p. 371. Just at present the plant stands idle.



Maryland Mine

Meanwhile the old Maryland Gold Mine, opened as early as 1867, and situated about a mile east of Great Falls, has again been put into sporadic operation. Free gold is found there in gash veins of quartz, associated with iron pyrite, galena, and limonite, in a gangue of mica schist and gneiss.

The ore is hoisted up a vertical shaft, said to be about 150 feet deep, from the ore stopes located on various levels, dumped over grizzlies, crushed and was formerly fed to a battery of 10 California stamps. Mercury was added to the pulp in the battery mortar boxes in the usual proportion of 3½ ozs. of quicksilver to every ounce of free gold present in the ore, and the pulp stream passed onto silver plates for catching the gold amalgam. The latter was retorted and the crude gold fluxed and refined and cast into bars. Reports current at that time were that $30,000 to $50,000 had been recovered in gold. Recently the Maryland Mine was again in regular operation, after the installation of an efficient Straub Mill, having 10 small stamps circularly arranged, by its manager, O. R. Turner, and is said to have yielded handsome returns.

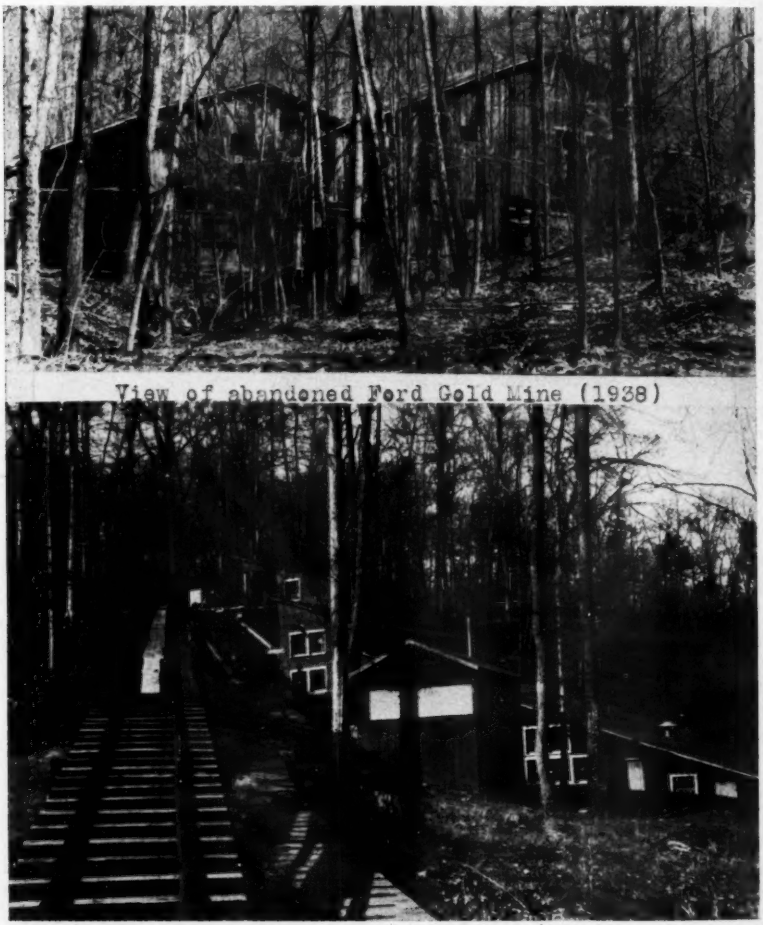
Weed reported in 1904 to the U.S. Geological Survey (Bull. 260, pp. 128-131) that the vein in the mine was 7 to 12 feet wide and consisted of massive, coarsely crystalline vitreous quartz, incased in well-defined walls of mica schist, coursing nearly north-south, and dipping 85° to the west. The richest ore, occurring in aggregates from an inch to several inches in diameter, contains galena carrying coarse free gold. Samples of solid pyrite from the 100 ft. level, showing no visible gold, assayed 4½ ozs. of gold and 1/3 oz. of silver per ton.

In the operation of the early mill a considerable tonnage of the pyritic ore was run over the concentrators. The product of the latter, almost pure pyrite, yielded $14.80 in gold and 1½ ozs. of silver per ton. Five hundred and four tons of ore from the payshoot, run through the mill in December, 1904, yielded $5,144. It is reported that the output of the Maryland Mine in gold-bearing ore, for 1937, was about $20,000 in value.

S. F. Emmons, in his "Notes on the Gold Deposits of Montgomery County, Maryland" (Trans. Am. Inst. Min. Engrs., Wash. Meeting, 1890) furnished a good description of the neighboring auriferous region and of the early developments thereof. He states, correctly, that it is more difficult to make geological observations here than in the more northern states; for whereas in the latter region the ice sheets of the Glacial period have scored off the surface of the whole country, in geologically recent times, down to a base of the hardest and most unaltered rock masses, here the rotting of the rocks under the influence of atmospheric agents has been going on uninterruptedly for a very long geological period. The rocks which carry the gold,—a belt of micaceous schist and gneiss, 6 or 7 miles wide—stand almost vertically, and by their mineralogical composition are peculiarly susceptible to decomposition by surface waters. One may sink shafts on the hills here for as much as one hundred feet through picking ground before reaching hard rock, and there is a gradual passage from the red clay soil that forms the upper 10 or 12 feet, into material which, on a fresh face, still shows the schistose character, but which crumbles on exposure to the air.

In mineralogical composition the fresh rock consists mainly of quartz

and muscovite, with a varying quantity of biotite, orthoclase, garnet, a chloritic mineral and ore particles (pyrite, gold, galena or magnetite). Altered or metamorphosed rock may show epidote, talc, soapstone, kaolin, limonite or zeolites and other secondary minerals. Finally, dikes of gabbro or diabase may be associated with the auriferous veins, as in the Huddleston region.



Oil-Flotation Gold-Recovery Mill of the Virginia Mines Co. at Bull Neck Run, Va. Inclined Track from Kirk Shaft at Left.

Photo by Ralph Lawrence, March 8, 1939

The old Maryland shaft, described above, was abandoned and a new vertical, square-timbered, 2-compartment shaft started in 1903, near the former, and is now (Feb. 1939) down 200 feet, with horizontal drifts on the vein at the bottom and at the 140 ft. level. The ore along the latter, and its connected overhead stopes, has been taken out and any ore now mined comes from stopes at the heads of the north and south drifts, respectively 70 and 130 feet long, at the 200 ft. level.

The vein appears to be about 5 feet wide, dipping 60° or 70° to the east, striking nearly north-south, and possesses fairly firm walls of schist. In one place the writer noted a horse of hard schist centrally splitting the vein, which, as seen, consists largely of massive white quartz, spotted with light yellow iron pyrites and bright, massive galena, with which the minute particles of free gold are associated. It is reported that about $50,000 worth of gold, mint value, has been taken out by the owners in the past three years.

A 100 H.P. electric motor, supplied with current from Washington, drives an air-compressor for operating the hoisting drum, drills and hydraulic mine pump. The ore is hoisted to the surface (270 ft. above sea level) in small mine cars and run by hand over narrow gauge level tracks to the adjacent stamp mill and dumped over grizzly bars into a capacious ore bin leading to an Allis-Chalmers coarse jaw crusher, then lifted by endless carrier to a high level bin and fine jaw crusher, which reduces the ore to ¼-¾ inch size. An automatic feeder passes the crushed ore to a 10-stamp, circular Straub battery (built at Oakland, Calif.). The stamps weigh 30 lbs. each and crush a total of 10 tons of ore daily.

From the mine itself barely enough water is delivered to the mill to wash the stamped pulp, mixed with mercury, onto a short plate of silvered copper, for catching the amalgam. The copper plate is prepared by running a solution of silver nitrate on its surface, which thus receives a coating of silver, and then brushing it over with mercury. Below the plate are placed several mercury traps for catching additional gold.

The pyrites in the ore are claimed to be so low grade in gold that they are not saved at present. The mine foreman stated that the average yield of the Maryland Mine ore is as much as $16 per ton in free gold, and that the vein can be followed by outcrops for at least 2 miles, so that the proposed building of a mill of 100 ton daily ore capacity should be fully justified.

The accompanying photographs show views of the present gallows frame, hoisting house and stamp mill.

Kirk Shaft Along Bull Neck Run, Va.
Photo by Ralph Lawrence, March 8, 1939

Top—Dr. Ulke (3rd from left) and party at Maryland Mine Shaft, ready to go below.
Center—View of Hoisting Plant at Maryland Mine.
Bottom—Amalgamation Mill at Maryland Mine
All photos taken Feb. 25, 1939, by W. H. Ball

Harrison Mine

In the spring of 1888, Kirk discovered gold on the farm of Mr. Harrison about a mile south of the Montgomery Mine (see map). In 1889 a 3-stamp mill was put up and the auriferous quartz from various veins running through the ground tested. The assays ran from $12 to $30 per ton, it is claimed. Sluicing was also attempted in the bottom land of Rock Run. In July, 1889, a 10-stamp mill was erected and a shaft sunk, eventually down to 160 feet, on one side of the veins, with levels and drifts, from 200 to 300 feet long, at depths of 90 and 160 feet.

Emmons states that the total amount of bullion produced by the Harrison Mill up to 1890 was about $12,000, from ore running from $4 to $27.50 in gold per ton. The gold was found in pure white quartz and in, or associated with, pyrites, and in the decomposed walls of schist.

North of the Harrison Mine the finding of some steel-gray telluride of bismuth (tetradymite) was reported.

South of the Harrison property, shafts were sunk and tunnels driven on several parallel quartzose veins running, roughly, north and south, and from 1 to 3 feet or more wide, and a mill of 10 stamps erected. Some of these abandoned workings may still be seen along the hillside bordering Rock Run. In this vicinity a new shaft is being sunk by George Kirk and associates, but the writer has not yet had an opportunity to examine its output.

Bogley Gold Mine

The Bogley Gold Mine is located about 2½ miles south of Rockville, Md., between the Falls Road (leading from Potomac to Rockville) and Bogley's Branch, but no information is at present available as to the richness of its ore and its output.

Huddleston Gold Mine

The Huddleston Gold Mine, finally, is situated about 8 miles northwest of Washington, near Bethesda, Md., and on the east fork of Cabin John Run, as indicated on the accompanying map. It was opened by a 50 ft. shaft, from which a tunnel was driven at 36 ft. depth. The direction of the vein is about north-south and its width from 2 to 4 feet. It has yielded some very rich and beautiful specimens of free gold.

The writer visited the old workings three years ago, and picked up, on the dump, some fine masses of ankerite in steatitic gabbro, associated with massive quartz, chlorite, small cubes of limonitic pyrite, and needles of black tourmaline.

Editor's Note:—The Maryland mines are in the southern part of Montgomery County; the Virginia Mine is in the northern part of Fairfax County.

FOSSIL CORALS AT CROTON LAKE, N. Y.

An interesting find of small fossilized corals, associated with fossilized brachiopods, equally small, was made on Wed. Aug. 2, 1939, by Mrs. Richard Hof, of Peekskill, N. Y. The fossils were found embedded in a small dark grayish shaly sandstone boulder on the north shore of Croton Lake, Westchester County, N. Y., about one mile east of the Parkway bridge. Ordinarily the spot where the boulder was picked up is covered by 15 feet of water but for the past few weeks prior to the discovery the water level had dropped considerably thus exposing many rocks and boulders.

IN SEARCH OF ACHICHINITLES

An Account of a Mineral Collecting Trip to Guanajuato, Mexico

By EARL L. CALVERT

Extending southeastward from the Rio Grande, bounded on the east by the Sierra Madre Oriental and on the west by the Sierra Madre Occidental, is the great Mexican plateau. For over a thousand miles south from El Paso this area extends, gradually rising in height from 3000 feet elevation at El Paso to nearly 8000 feet at Mexico City. Near the latter place the east and west ranges converge and as if combinding their efforts, they have thrown up those magnificent peaks of Orizaba, Popocateptl, Ixtaciuatl and others rising over 18,000 feet.

The plateau is about 250 miles in width and lies under a clear sky with little rain. The extensive plain is traversed at intervals by isolated mountain ranges. The land, although dry and seemingly desolate, supports a variety of fauna and flora. The meager population is engaged largely in mining and stock raising.

The author and a companion, Wendell O. Stewart, crossed the border at El Paso, Texas, and drove as far south as Chihuahua city. Due to the rough conditions of the roads, we left the car there and continued south by train visiting the cities of Parral, Durango, Zacatecas, Agua Calientes, San Luis Potosi and Guanajuato; this article being concerned with the latter place. At Salao we got off the main line train to Mexico City and took the branch line to Guanajuato. The line twists and turns up a narrow mountain canyon following the course of the Rio de Guanajuato. The Cañada de Marfil affords a pass through the hills into the city. It is picturesquely situated in a narrow canyon surrounded on all sides by the Sierra de Guanajuato. We were greeted at the station by the usual crowd and by cargadores, who, wearing large nickel plated badges and a coil of rope over their shoulder, grabbed our baggage and hurried us off to a waiting taxi. A mile ride up the winding canyon and we were in the center of the city.

Before going on with the story of Guanajuato, perhaps I should explain the meaning of the title. 'Achichinitle" means a pretty specimen of mineral. It is a word known and understood by all the natives in the city and surrounding district, but is apparently unheard of in most of the other mining districts of Mexico. The word is of Aztec origin and is indicative of the antiquity of collecting in the district. The reader may be at a disadvantage as to how to pronounce the word, but once in Guanajuato, he will soon learn. Pronounced (Ah-chi-chia-le) one will soon be saying: "Hay Achichinitle que se venden?" (Do you have minerals for sale?)

The name Guanajuanto is said to have been derived from a Trascan Indian word signifying "Place of the Frogs." The name was given to the place because a large stone image, chiseled to represent a frog, was found there and worshiped by the Indians.

Mining in Guanajuato dates back much farther than that in the United States. The first discovery by the white man was in 1548. It is said a weary Peon rested by the roadside while journeying from Zacatecas to Pachuca. His small campfire had died down and the ashes were being scattered by the wind when he noticed shining globules of white metal. What was it? and the story of Guanajuato began. For nearly 400 years it has continued to be a great silver pro-

ducer, although today it is only a wasted shadow of its former greatness. The eighteenth century marked the greatest era of progress. The city at that time boasted of a population of 100,000 people. A record of precious metal production was established that our Virginia City, Tonopah or Goldfield have not approached. Lasting monuments were raised which still stand as eloquent testimony of former industry and wealth.

We arrive in the city about noon, where we took lodging in the city's principal hotel, "La Luna". This hotel had formerly been the state governor's mansion and had all the appearance of one. We were given two spacious rooms with high ceilings and a balcony overlooking the plaza. From our balcony, in the early morning, we could see the native women sweeping the sidewalks with a sort of short handle wisk broom or the burros with their loads of charcoal or ore; in the evening the band and the promenade in the plaza. The furnishings of the room were rather antique, especially the marble wash basins. The only water was that brought in pitchers. The beds were comfortable although not of the interspring mattress type but the pillows were almost intolerable. Two for each bed were provided. They were equal in length to the width of the bed and extremely hard and were usually found on the floor by morning.

The hotel provided three hearty meals a day, beefsteak being served morning, noon and night. The cost for room and board amounted to five pesos a day or one dollar American money.

After spending a day walking up and down the cobblestone streets of the city, visiting the street markets, shops, state mining school and inquiring of the natives as to the location of the mines around the city, we decided to visit some of the latter on foot.

On the north side of the city and extending for a distance of about seven miles is found the 'Veta Madre" or mother vein from which the larger part of the silver and gold of this district has been produced. Its outcrop may be found near the summit of the hills. Along its length mines were started. These developed into small pueblos, the most famous of which is Valencia. From this great vein there has been produced more than a billion dollars in silver and gold.

We started early in the morning equipped with knap sacks, cameras, prospectors picks and a lunch consisting of oranges, cheese sandwiches and hard boiled eggs that was put up by the hotel cook. The natives gazed at us wonderingly as we hiked along the cobblestone streets past the markets of food and pottery toward the outskirts of the city. Two Indian boys, whom we had met the day before, saw us and immediately decided we needed guides. We protested at first, but without avail; however, I think if they had known what a hike they had before them, they would not have been so eager to join us. We soon found ourselves at the edge of the city where the hills rise sharply and we began the ascent toward the ancient mine workings. Mr. Stewart, with his long legs and Sierra Mountain hiking experience, kept the two guides and me in a trot most of the time. We were able to survive, however, with aid of an occasional stop to take a picture. As we ascended toward the summit, the view of the city became excellent. The city is situated in a narrow winding canyon through which the Guanajuato river flows and is surrounded on all sides by

brown hills. At the time of our visit, the river was quite inconspicious, but upon two occasions in the past it destroyed a larger part of the city. To prevent further inundation, a dam, called "La Presa", has been built in the canyon above the city to catch the water from any sudden cloud burst. The dam is built of a greenish sandstone, found near the site, and decorated in a most pleasing fashion with tile work and other unique construction. Below the dam is a well-kept park, with its popular promenade and fine residences built along each side of the canyon. The city is a blend of old Spain and Mexico. The narrow winding cobblestone streets become so steep, in places, that it is necessary to piece them out with steps. Here and there, rising above the other flat topped buildings, one sees the domes of Guanajuato's many churches. In the church of San Francisco is found the venerated image of Nuestra Senora de Guanajuato, a gift from Philip the Second of Spain in appreciation for the wealth obtained from the mines of Guanajuato. There are many other places of historical interest for here was the birthplace of Mexico's independence under the leadership of Miguel Hildalgo.

Old haciendas are seen on the hills surrounding the city. They consist, in most cases, of a strongly rock walled inclosure of from two to five acres within the confines of which will be found a mine shaft and various other stone constructed walls and rooms in a state of ruin. After an hour's hike, we reached the summit of the hill and the village of Valencia. The imposing church of Valenciana is a study in contrasts to the squat adobe shacks and decaying wall which surround it. This edifice has not been dispoiled; neither time nor marauding man has changed its imposing grandeur. Antonio Obregon, to commemorate the finding of the great Valenciana bonanza, began building it in 1765 and completed it 20 years later. Obregon employed a novel idea in financing the construction of the church. Each day he required his miners to bring out a piece of ore the size of the hand and to deposit it in a certain place. The proceeds were to be used to construct the church. It is said to have cost approximately $1,000,000.

Near by, stands the old abode of a former count. The caretaker, a hospitable old Mexican, very graciously offered to show us through. In the patio were artistically built fountains which were covered and surrounded by flowers. These structures were made of white and amethyst quartz crystal groups. In one of the rooms we were shown a large iron chest, reminding one of the treasure chest described in Stevenson's 'Treasure Island'. The chest was filled with old books containing records of the Valenciana mine pertaining to activities between 1700 and 1800. From the roof of this imposing mansion, we had a good view of the massive walled inclosure of the Valenciana mine. We purchased a few crystal groups from the master of the house, thanked him for his courtesy, and went on our way to visit the mine.

The walls of solid masonry, surrounding the mine, are about 20 feet high and were built to protect the property from roving bands of marauders and Indians. We entered through a heavy wooden gate and were greeted by a barking dog. An Indian woman soon appeared and gave us full permission to look where we pleased. The walls inclose at least five acres of ground. Near the center is the famous Jose Shaft, also called "Tiro General",

and is one of the greatest mining achievements of its time. It measures 33 feet in diameter and 1800 feet deep. It is octagonal in shape and lined with solid masonry for one hundred feet down from the surface. It was built by Obregon at a cost of 1,000,000 dollars but the bonzana it uncovered yielded over 300,000,000 dollars. William J. Bryan said it was the only hole he had ever seen large and deep enough to bury the gold standard.

Hoisting was done by mule power. Eight malacates or horse whims, one hoisting from each face of the octagon, raised the broken rock to the surface in rawhide buckets.

The old method of extracting silver from the ore was called the Patio Process. A patio means a yard or inclosure and the process derives its name therefrom. The process was discovered in 1557 by Bartholome de Medina and first used in the Pachuca district of Mexico. The ore was first broken by hand labor then ground fine in Chilean mills and Arrastres operated by mule power. The ground ore was then taken to the patio, a large stone covered floor, and piled in heaps of from twenty to four hundred tons. Common salt was added and the charged was mixed by horses or mules yoked together and driven around and around. After a period of settling, copper sulfate, mercury, water and more salt was added and the mixing continued. The amount of chemicals added depended upon the richness of the ore and other factors which were more or less left to the judgment of the operator. The amount of mercury added was about eight times the estimated amount of silver in the ore. The period of treatment varied from ten to forty days. The mercury amalgam containing the values was separated from the pulp by various methods of washing and sluicing. The amalgam was retorted and the mercury recovered by condensation for use again. The chemistry of the process is rather involved and probably not well understood today. The net result seems to have been the reduction of the silver sulfides to metallic silver in which state it readily combines with the mercury. The process was carried on successfully for years without the operators having the slightest knowledge of the materials used or their action. Remains of the old patios may be seen in various places around Guanajuato today. The process was carried on inside the walled inclosures surrounding the mines to guard against theft.

The visitor, today, finds the old workings going to ruin. The walls in many places have crumbled or have been broken down to provide for modern machinery used in later years of operation. Cactus grows profusely in the old walled inclosures. We wandered with supreme delight through the multitudinous ruins, speculating on the past and exchanging a familiar "Buenos dias" with the natives who came out to see what the Gringos might be doing.

After spending some time taking pictures of the Valenciana, we hiked on over more hills to visit the Rayas and Mellado, which are two equally famous mines located on the Veta Madre. They are a repetition of the one just described, each with its church, massive stone walled inclosure and native homes surrounding it. Toward evening we began to feel the effects of a long hike. Our two guides took every opportunity to lie down for a little relaxation when we stopped to examine something of interest. We kept them busy most of the time in-

quiring of the native of specimens for sale. Most of the families can produce a few specimens, generally of quartz crystals, often times amethyst, but which are usually of inferior quality. The prices were generally quite reasonable although with a little bargaining we were able to buy for half the original price to the satisfacation of all concerned. It is possible that some good specimens could be collected in the old workings if one had sufficient time to explore them.

By sundown we were back in the city. We had made about a ten mile hike. We paid our guides two pesos each and were ready for a good beefsteak dinner and a night's rest.

In years past the mines of Guanajuato have produced many fine mineral specimens. Very complete and representive collections may be seen in the 'Colejo del Estado', the state mining school and at the old home of late Senor Ponciano Aguilar. The latter collection is one of unusual merit. It was made by a man who figured prominently in the affairs of the city for a number of years.

The mines in Guanajuato have been operated solely for their gold and silver values. The silver occurs generally in the form of sulfides which carry varying amounts of gold. The silver minerals found are polybasite, stephanite, argentite, pyrargyrite, miargyrite, freieslebenite, naumannite, proustite, native silver, cerargyrite, bromyrite and aguilarite. Some very fine crystallized specimens of pyrargyrite may be seen in the collection mentioned above. Calcite occurs abundantly and in a variety of crystal forms; twinned crystals are common. Crystals of calcite on white and amethyst quartz form very attractive specimens. Amethyst quartz is common. The specimens are not as deeply colored as those from South America, but have a delicate lavender cast peculiar to the district.

Fine specimens of apophyllite occur, as a rule, growing on amethyst quartz of light color.

Dolomite is another common mineral. It occurs in rhombohedral crystals with a pearly luster. The pearly luster of some of the calcite crystals is due to a covering of dolomite.

Less common minerals include valencianite, a feldspar and variety of adularia; aguilarite, a silver selenide named for Senor Aguilar and Guanajuatite, a selenobismitite. Copper ores include chalcopyrite, chrysocolla, polybasite and copper carbonates. None of these are abundant. Antimony is common in the form of massive stibnite and associated with silver forming the silver antimony sulfide minerals. Pyrite is common but well crystallized specimens are not. Other rather uncommon minerals are galena, sphalerite, siderite, manganese ores, cerussite, amianthus, fluorite, gypsum, barite, cinnabar, molybdenite and cassiterite.

Guanajuato is a city rich in historical record, in its mines, in its natural beauty, and in its architecture. I have endeavored in this article to give the reader a few mental imprints, but lasting memories and experiences may only be acquired by a journey into the southern land. The change to the modern is rapidly sweeping over Mexico and that "Old Mexico" that so delights the visitor from the states may soon be gone. The sound of church bells in the morning, the busy and smelly markets, the promenades in cool patios in the evening, the charros in full dress and vivid Mexican girls take one far back into the past and leave memories never to be forgotten, and so "vayan con Dios mis amigos".

THE SHAWANGUNK MOUNTAINS OF NEW YORK

By E. HEUSSER
Ellenville, N. Y.

Emerging from the waters of the Atlantic Ocean, on the east and south of North America, the continental shelf rises to a coastal plain stretching across to meet the base of the rugged Appalachian Highlands.

From Alabama to Canada this lofty and extensive mountain range lifts its head in picturesque beauty making up the most noteworthy topographical features in a dozen states. As the Great Smoky Mountains of Tennessee, the Blue Ridge Mountains of North Carolina, Virginia and Maryland, this highly folded and eroded mountain system traverses Pennsylvania as the Blue Mountains and as the Kittatinny Range through New Jersey framing the majestic Hudson, the Berkshires and White Mountains far beyond to where the St. Lawrence River rolls its waters to the sea.

In Orange and Ulster Counties, in New York state, a section of these highly folded masses of the Appalachians proper is a most conspicuous physiographical feature, a prominent mass of hard conglomerate, locally called the Shawangunk Mountains. A winding ridge, west and parallel to the Hudson Highlands, it attains its greatest height of 2250 feet at Sam's Point and finally, after a nearly northeastern continuation terminates in the Kingston region in an aggregation of various rock formations of great complexity.

Visible from a considerable distance across the wide and fertile Wallkill Valley to the east, the Shawangunks stand out as a bold escarpment, clear and sharp against the western sky.

East of the continental shelf, over which the Atlantic now rolls its thundering surf, once stood a mighty mountain chain, called Old Appalachia. Vigorous erosion during the long Ordovician Period deposited sediments of great thickness in a synclinal trough which then extended along, where now lies the entire eastern shore of the present North American continent. While an estuary of comparatively shallow water, the tremendous burden of sediment effected a gradual downwarping of the seafloor, the steady sinking permitting an accumulation to a thickness of several thousand feet.

This Ordovician Period finally came to an end with the Taconic Revolution and the vast deposits, the remnants of Old Appalachia, were literally born out of sea to form a new and mighty mountain range. This lofty mountain system, perhaps at one time rivalling the Alps in height, a mass of shale and sandstone, the so-called Hudson River shale, forms the underlying strata of the Shawangunk Mountains. A highly folded mass, tilted at high angles with increasing intensity in passing eastward, attests for this once mighty Taconic Range. This can be seen best by approaching the Shawangunks over one of the many excellent highways, leading to the eastern face of the mountain, which brings one within close range for inspection. Here, supporting the uppermost stratum of coarse conglomerate which forms a protecting mantle, we see the remains of this once mighty achievement of Taconic mountain making. The dark, splintery shale is in strong contrast with the overlying, light colored rock of later age. Where modern engineering has blasted its

way, where erosion cut deep gullies or along where contacts come to open view is one's best chance for a closer inspection. Here may be seen what geologists call an unconformity. By that we mean the deposits of a later age were laid upon the eroded edges of Ordovician shale of distinctly different dip from the bedding above. Erosion of the shale could have taken place only above sea water, the overlying deposits could be laid down only during the following submergence, and so we know that we are near the horizon of a once mighty land of the remote past.

With the activities of a great engineering project, whose shafts pierce the heart of the Shawangunks,[1] there is splendid opportunity to inspect the deeper deposits of this Hudson River shale. On going from west to east, visiting the various shafts, it is evident that the shale is harder and compacter as we approach the Hudson Highlands. This is in conformity with the fact that during the Taconic Revolution, the greatest compressive force came from that direction, changing sediments to metamorphic rocks such as slates and schists, whose outcrops can occasionally be seen in the southeastern part of the state.

By the fossils of the many varied rocks of Ordovician Period, we find evidence of abundant but primitive sealife. If one examines perchance some shale bank where the weathered surface rock has been stripped down to a compact mass or a search is made through the debris removed from the various shafts under construction, from a depth of many hundreds of feet, one can find the carbonized remains of graptolites, a problematical group. Upon death, these suspended colonies sank to the seafloor and upon subsequent sedimentation became embedded in the rock. Seaweed of primitive type may be found, mineral deposits of calcite, quartz and mica. Crush-zones containing angular fragments of sandstone firmly cemented together by crystallized calcite, slickensides are the results of constant readjustment in the earth's crust.

Due to the gradual sinking of the land below sealevel, the first Silurian deposits were laid down upon the eroded shales of the preceeding Ordovician Period and the steady subsidence accommodated the vast amount of deposit which was laid down, layer upon layer, in the usual manner. This process was finally brought to a close by the most intense terrestrial disturbance in the geological history of the North American continent. This profound and far reaching Appalachian revolution terminated the vast Paleozoic Era and gave birth to our present Appalachian Mountains.

Life in the Silurian sea was of continued existence of the preceeding era and while we have evidence of this in lime rock and finer grained formations in the northern region of the Shawangunks, the preservation of such geological records is highly improbable owing to the exceedingly coarse texture of the rock over the greater part of this mountain range. Where favorable conditions existed, so-called fossil seaweed has been found and although they are now generally regarded as wormburrows, they may be highly important as an index fossil.

Were it not for the exceedingly hard Silurian conglomerate, the soft underlying and highly eroded Hudson River shales would prove an easy prey to the atmospheric agencies. This light colored grit forms a protecting

1 Delaware Aqueduct now under construction by the Board of Water Supply of New York City.

mantle over this remarkable mountain range.

From the eastern face of the Shawangunks across a fairly level plateau, where the shallow soil permits only a scanty growth of vegetation, past springfed mountain lakes, noted for their beauty and fame as summer resorts, Lake Awosting, Minnewaska, and Mohonk, the boulderstrewn, glacier-polished surface dips in a westernly direction at an everincreasing angle under the glacial drift of the Roundout Valley floor, below the distant Catskills and beyond. Rushing mountain streams, cascading over cliffs and ledges, carved deep gorges through hard rock, down to the underlying shales. Profound erosion everywhere, huge blocks crashing downward, pried from the parent rock by the relentless onslaught of time and elements, result in weird and fantastic sceneries.

From a geological standpoint the above-mentioned lakes deserve a special mention. Unlike many other lakes, formed by the ponding of waters by glacial drift, they owe their origin to the scooping action of a moving glacier. Ice erosion of the soft shale exposed to the surface before the advance of the great ice sheet, has left a rim of hard rock, retaining the waters to this present day.

Here, then, we find a striking contrast between creation and decay. Erosion and removal of great rock masses bring these beautiful bodies of water ever nearer to the eastern cliffs and time will eventually destroy their ephemeral beauty.

As one follows the western slope of the Shawangunks, from Kingston through the deep and curving Roundout valley to the New Jersey State line, various abandoned mines and quarries are encountered, indicating considerable mining activities in days gone by. Tunnels and shafts ranging in size and depth from a mere attempt to the extent of business on a large scale attest for varied success from a paying proposition to complete failure. However, how long or how short these operations may have lasted, indications suggest final disappointment and defeat, for today there is not a single pound of ore mined in this region. Primitive methods, poor grade of ore, the exceedingly hard quartzite forming the base of the mountain and large volumes of water entailed heavy expense and hard labor and so today we have only these markers of human endeavor to enrich the pages of history or perhaps reward an ardent collector of rocks and minerals with what men cast away in a feverish search for wealth. These mines which once gave their meager share of lead and copper ores have long since ceased, only the hollow sound of dripping water now, where once was heard the ringing sound of steel. Handsome groups of quartz crystals from the once famous Ellenville locality enrich the cabinets of educational buildings and private collections everywhere. As a last endeavor for a livelihood, quantities of these beautiful crystals were sold when profits from metallic ores were on a steady decline. Richer deposits and better shipping facilities of copper and lead elsewhere have sealed the fate of these enterprises and the last of the men who, here hoped and labored, has long since gone over the old mine road.

Never send nor give a specimen away unless a label giving its name and locality accompanies it.

A MINERAL DAY AT THE FAIR

Plainfield Mineralogical Society, Sponsor

An event which will go down in history as one of the most successful meetings ever held in the East was the Mineral Day at the New York City's World Fair on Sat., Aug. 19, 1939. Not only were there a large number of mineral collectors present, (16 mineral clubs were cooperating), but the program was so varied, instructive, interesting and entertaining that every one present had a good time. Not even the rain, which started falling about 11:00 a.m., could put a damper to the enthusiasm of the group even though by 3:00 p.m. it began to pour and continued to do so steadily into the early hours of the next day.

Long before the activities started at 10:00 a.m., collectors began to make their appearance at the Little Theater in the Science and Educational Building. Here each one registered and then was presented with a fine colored map of the Fair Grounds, some circulars, and a lapel emblem which was rather unique—a thin rectangular sheet of muscovite.

At 10:00 a.m., Mr. Thomas A. Wright, President of the Plainfield Mineralogical Society, who was the Chairman of the Mineral Day at the Fair, called the group to order and then introduced Dr. Gerald Wendt, Director of Science and Education at the Fair, as the first speaker. Dr. Wendt first welcomed the group to the Fair and then proceeded to give a most interesting talk on the Fair Exhibits. He stated, for example, that there was no building exclusively devoted to science at the Fair. He wanted exhibits to be of such character as to appeal to the average person who would understand them and want to study about them later. Exhibits at the Fair are not for professionals but for amateurs, he further informed us.

At the conclusion of Dr. Wendt's address, Mr. Wright called upon all presidents and secretaries of the various clubs cooperating, who might be present, to stand up and be introduced.

Capt. Garland Peyton, Director of the Division of Mines, Mining and Geology of Georgia, was the next speaker. He had made a special trip from Atlanta, Ga., to be present at the Mineral Day at the Fair, and he brought with him a most cordial invitation from Gov. Rivers for the group to visit Georgia and its mineral localities. He gave a most interesting talk on what the State of Georgia and its many mineral collectors were doing to educate the youngsters in mineralogy.

Mr. Joseph D'Agostino, Secretary of the Plainfield Mineralogical Society and Exhibit Manager for the RCA World's Fair Exhibit, was the last speaker at the Little Theater but he only spoke briefly and it was relative to the tour of the buildings to be visited and advising the group to stick together.

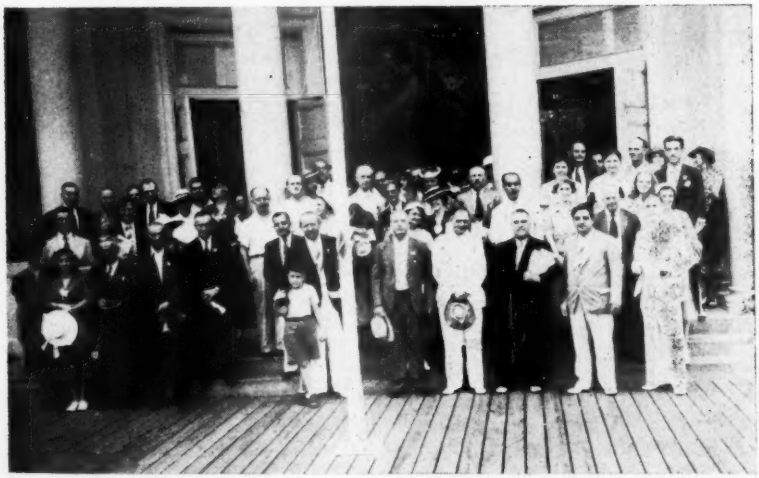
The first building visited was the House of Jewels where a $5,000,000 exhibit of diamonds was on display. The exhibit included diamond crystals of all sizes and shapes as they occur in nature and finished stones of fabulous value. It is the largest assortment of diamonds ever to be shown to the public at one time. It was further brought to the group's attention that 15 tons of material must be mined and sorted to obtain a single one-carat stone of fair quality and one marvels at the years of toil and effort necessary to produce the stones that were shown

in this exhibit. Mr. Rogers, President of The De Beers Consolidated Mines, Ltd., gave an interesting discourse on the occurrence of diamonds and then allowed the gates to be opened so that the visitors might have a better and closer view of the fine array of marvelous diamonds, both cut and uncut. This was a privilege not granted the general public.

The party next divided into two groups—one going directly to the Missouri Building, with Mr. D'Agostino as guide, the other, led by Mr. Wright, to the Metals Building where a demonstration of some commercial uses of diamonds were viewed—diamond drilling and diamond sawing. Many in the group went away with souvenirs of small diamond drill cores of granite that had been cut out in their presence. The group then proceeded on to the Missouri Building where it united with the other group.

The Missouri Building is devoted almost entirely to minerals but the minerals are not displayed in cases, cabinets, or on tables as one would expect. On the contrary they are arranged so as to resemble the terrain of some sections of the State. It was quite a unique experience to pass by the "rock outcrops" or "mountain debris" and pick out limestone, chert, calcite, dolomite, galena, and sphalerite. A very large limestone cave with beautiful stalactites and stalagmites lining its interior was an especially attractive feature.

The Georgia Building was the last one visited during the morning session. Here many Georgia minerals, some of which are attractive crystals, are nicely displayed in cases. Again Capt. Peyton gave a brief talk, this time relative to the minerals on display. A number of pamphlets on Georgia were distributed to the group after which some of the members were persuaded to go out in front of the building and have a picture taken of them. Three pictures were taken of the group by Mr. Richard P. Milburn, President of the Newark Mineralo-



Part of the Group in Front of the Georgia Building.

gical Society. After the members had finished their examination of the minerals on display in the Georgia Building they scattered in various directions searching for restaurants as it was time for lunch.

At 2:00 p.m. the group reassembled at the Chilean Pavilion where another exhibit of fine minerals was examined. The world famous copper mines of Chuquieamata, Chile, and the equally famous nitrate fields of northern Chile had their quota of interesting and rare minerals on display. Mr. James Head, Vice-President of the Chile Exploration Co., which owns the Chuquicamata mines, was present and he addressed the group relative to the many interesting minerals which occur in the copper mines.

The group then moved on to the Brazilian Pavilion where it gathered in its spacious auditorium, registered, and then listened to two very interesting addresses. The first was by Dr. A. C. Hawkins of the Soil Conservation Service, U. S. Department of Agriculture, and author of "The Book of Minerals". Dr. Hawkins stressed the importance of collecting and the preservation of good specimens. He brought out a number of very vital facts which made a deep impression on his audience.

The second address had been prepared by Dr. Diniz-Gonzales, Chief Geologist, Republic of Brazil. He personally welcomed the group, on behalf of the Brazilian Government, to the Brazilian exhibits, but his address was read by a pretty senorita. In the address, Dr. Gonzales stressed the close ties between the United States of America and the Republic of Brazil and how much Brazil was indebted for its geological progress to a number of American geologists. At the conclusion of this address, the group arose and headed for the mineral exhibits in another part of the building. On the way out of the auditorium, each member was handed a large envelope containing a number of pamphlets on Brazilian minerals.

The mineral exhibit in the Brazilian Building embraced a large number of vararities, granites, marbles, ores, rare minerals and gems (both rough and cut). The rare minerals and the gems were of special interest to the group.

A pleasant surprise, a reception, was next in store for the group. The party was guided to the Brazilian Cocktail Lounge where many rare delicacies were served. The Brazilian Government outdid itself in entertaining the mineral collectors. Many in the group stated that this reception was the outstanding event of The Mineral Day at the Fair.

The reception was the last event on the program and most of the group left for home. Those that remained were invited by Mr. D'Agostino to visit the RCA Building to examine a mineral exhibit which he had there on display in the Lounge, but which was not open to the general public. Those who followed Mr. D'Agostino received a thrill when they saw his exhibit. The exhibit consisted of about 100 beautifully crystallized minerals arranged in an inverted 6 foot glass disc which was covered by a glass top. It was a most unique and attractive display and everyone present commended it highly. A picture of the party, grouped around the exhibit, was taken.

PHOTO ON P. 317

Examining Mr. D'Agostino's Mineral Exhibit in the Lounge of the RCA Building. The five persons grouped around the exhibit are, left to right: Miss Helen Wright, Peter Zodac, Joseph D'Agostino (gray suit), Thomas A. Wright (white flannels), and the young son of Mr. and Mrs. O. B. J. Fraser. Can you identify some of the others?

Mr. D'Agostino, however, felt the day could not be perfect without a few of the group being televised on a radio broadcast which was held in the RCA Building. So he rounded up eight brave souls and led them away to the broadcasting station, in another part of the building, while the rest stayed behind to watch the proceedings in this Lounge which had been converted into a television exhibition room. First to be televised was the young son of Mr. O. B. J. Fraser of Westfield, N. J. Then followed Peter Zodac, Thomas Wright, Dr. A. C. Hawkins, a Mr. Fowler, Alexander Muir, R. Emmet Doherty, and Miss Rosemary Stevens. This concluded the activities for the day.

SOME SIDELIGHTS ON THE MINERAL DAY AT THE FAIR

The Brazilian Government outdid itself in entertaining the large group at the Brazilian Pavilion and the collectors were lavish in their praise of it.

While in the Georgia Building a pleasant event was the introduction to the group of those in charge of the Georgia Exhibits. When a young "Georgia Peach" was introduced, we rushed forward to catch her name and possibly her address as well, but all the boys seemed to have the same idea and in the ensuing rush we were bounced back like a rubber ball. For once we wished we were a giant or a college fullback!

The mica emblem which each collector had displayed in his lapel or fastened to her dress was a novel idea. It took well with the group and it attracted considerable attention. Mr. D'Agostino was responsible for this unique identification badge.

Captain Garland Peyton, Director of the Georgia Division of Mines, Mining and Geology, of Atlanta, Ga., who came up specially for the meeting, was the R & M.A. member who traveled the longest distance.

We enjoyed Miss Rosemary Stevens television broadcast, even though it was a rather painful experience to our individual self. So many "boys" poked us in the ribs wanting to know who the pretty girl was, that we are still a little sore in our midsection.

Did you notice the good looking state trooper in the Georgia Building? The girls saw him all right and he was soon surrounded by them. The uniform gets the girls every time, especially if the wearer is young and handsome.

When it comes to putting on a good show we have to hand it to the two Jersey "boys" Joe D'Agostino and Tom Wright. It was they who planned, made arrangements and carried out all activities. It was the finest mineral show we ever attended.

The Old Dominion State was represented by three of its most distinguished citizens, Mr. and Mrs. Oliver Wilbur and son Robert, of Waynesboro, Va.

There was on display in the Georgia Building a fine group of pale bluish barite crystals about which we wanted to get some information but could not. The "Georgia Peach" was surrounded by "boys", the state trooper was surrounded by "girls", while Capt. Peyton could not even be seen. But why worry. This will give us an excuse to revisit the Fair and the Georgia Building before the summer is over.

John C. Pohl, Jr., of Easton, Penn., said that this trip was his 18th visit to the Fair.

All the members who were televised put in a good word for *Rocks and Minerals Magazine.*

Was the reception at the Brazilian Pavilion a success? Just ask Harry Grahl, of New York City, what he thought of it—the "boy" who kept insisting there were three glasses in front of him when we saw only one.

Why did Curt Segeler, of Brooklyn, N. Y., and R. Emmet Doherty, of Peekskill, N. Y., persist in remaining at the Fair until the sidewalks were taken in prior to closing for the night? And who was the "drowned rat" who tagged after them in the pouring rain?

Prof. Arthur Sandiford, of Milford, Conn., helped to swell the number of educators at the meeting.

We bet everybody did not get samples of the delicious Georgia candy that was passed out by another young Miss in the Georgia Building. But do not let the matter worry you, boys. We took a few extra pieces for your sakes!

John A. Grenzig, the popular mineral dealer from Brooklyn, N. Y., almost stole the show in the Brazilian auditorium when he passed around for examination two rare and very fine cut gems. One was a 1.95 carat golden willemite from Franklin, N. J., the other a large and very handsome green apatite from Durango, Mexico.

"This is some party!" said Newton Harris, of Croton-on-Hudson, N. Y., while at the Brazilian reception, as he nonchalantly lit a cigar for which he had exchanged a 25c coin.

The cave in the Missouri Building had a narrow escape from desecration. D. D. Stevens, of Castle Point, N. Y., wanted to crawl into it and knock off a few stalactites but—he forgot to bring his hammer.

Dr. A. C. Hawkins said so many nice things about *Rocks and Minerals Magazine* in his address that members began to inquire later if he was our new press agent.

It was a pleasure to see Geo. Gehman, of New York City, at the Fair, and especially so as he presented us with a valuable specimen—molybdenite associated with pitchblende, from New York State. And Peekskill! What do you know?

Mrs. J. R. Algor, of Fair Haven, N. J., was substituting for her son, Marshall, who was away for the summer. A very charming lady. is Mrs. Algor, and we were delighted in seeing her again.

While Alexander Muir, of Scotch Plains, N. J., was being televised, a group of girls behind us became highly excited. They insisted he was a movie actor who must have joined our party.

H. L. Van Sciver, of Westbrookville, N. Y., was down to help swell the crowd and to meet some of the members.

With hundreds of fine cut stones and beautiful gemmy crystals and even rare minerals to examine in the Brazilian Building, Miss Helen Wright, of Castle Point, N. Y., spent the time at her disposaal in searching for a chunk of tin ore that was said to be somewhere in the mineral hall. Can you imagine that!

Who was the pretty girl with Mr. Walter Helbig, of Queens Village, N. Y.? Some of the boys asked us about her but we could give no information.

Thomas A. Wright looked very handsome in his summer finery.

The many beautiful minerals on exhibit must surely have given Walter E. Kuenstler, of Grantwood, N. J., a number of good ideas for his pictures. He is a commercial artist and no doubt some of his future pictures to be seen in magazines and on posters may feature minerals.

The diamonds in the House of Jewels did not sparkle half as much as did the blue eyes of pretty 14 year old Virginia Rupke, of Buffalo, N. Y.

There were a number of strange mineral names being used in conversation among the girls at Miss Gertrude Schmidt's table at the height of the reception in the Brazilian Building. Too bad we did not make a note of some of them as it might prove useful in the naming of future new minerals. Miss Schmidt is a nurse at the Veterans Hospital, Castle Point, N. Y.

Mineral collectors are very fortunate in having Mr. Joseph D'Agostino interested in mineralogy as he has the touch of a master showman. He can think of more ideas for furthering mineralogy than any other collector that we know. And best of all, he personally carries them out. The Mineral Day at the Fair is but one of his many ideas and successes.

FIELD MUSEUM ACQUIRES MAPLETON METEORITE

A new siderite, or iron meteorite, to be called the Mapleton meteorite, has been acquired by Field Museum of Natural History, Chicago, Ill., from Mr. Harvey Meevers, Mapleton, Iowa, it was announced Aug. 29th, 1939, by Clifford C. Gregg, director of the museum.

This is the first iron meteorite to be reported from that state. Previous to the discovery of this iron, four other meteorites were known from Iowa, three of which were aerolites or stone meteorites, and one a meso-siderite or variety of iron-stone meteorite, according to Sharat K. Roy, curator of geology.

The meteorite just acquired was accidentally found by Mr. Meevers on June 17, 1939, in his cornfield. It was said to have been struck by his cultivator. The location of the find is in Cooper Township, Monona County, Iowa, on the east side of a rather steep hill, a little less than four miles east-northeast of Mapleton.

No conclusive evidence is at hand regarding the date and time of the fall of the meteorite. In the winter of 1916 residents of Emmetsburg, Iowa, reported a meteor darting through the sky in a south-southeasterly direction at about 10 P.M. Emmetsburg is about eighty-five miles northeast of Mapleton. At about the same time, persons at Mapleton, including Mr. Meevers, observed a large meteor traveling from west to east. The passage was accompanied by a brilliant display of light and a rumbling noise, followed by a loud explosion. Mr. Meevers recalls the year and time of the fall as "in the evening after some folks were in bed, before we got into the war, in the time of the year when the ground was frozen." Whether these observations can be directly associated with the fall of the present meteorite is a matter that can neither be controverted nor confirmed.

The meteorite, which probably does not represent much more than one-half of the original mass, weighs 49 kilograms (108 pounds). Its greatest length, breadth, and height are 17½ inches, 9⅞ inches, and 6 5/16 inches respectively.

CLUB AND SOCIETY NOTES

New Haven Mineral Club

An important meeting will be held Mon., Oct. 9th, 1939, whose program is as follows: Annual Election of Officers. Enrollment of Lapidary Class. Distribution of Prizes. Three reels on Copper Mining in Arizona to be shown by William Ducharme.

LILLIAN M. OTERSEN, *Secretary.*

A very warm tribute was given ROCKS AND MINERALS by Mrs. Lillian M. Otersen, Secretary of the New Haven Mineral Club, in a recent issue of the Club's *Bulletin*. Not only does she urge all club members to subscribe to ROCKS AND MINERALS , giving a brief account of the magazine's founding and purpose, but she very graciously states that the founding and progress of the New Haven Mineral Club is due to the assistance given it by ROCKS AND MINERALS.

Manchester Addresses Philadelphia Society

At the regular monthly meeting of the Philadelphia Mineralogical Society, held Thurs., Sept. 7th, 1939, at the Academy of Sciences in Philadelphia, James G. Manchester was the guest speaker. His subject was "The Chalcedony Pseudomorphs of Florida", illustrated by colored lantern slides. A fine suite of chalcedony pseudomorphs, from Mr. Manchester's fine collection, were on display which were examined with much interest by the members, when the meeting was not in session.

. . Collectors' Tales . .

By PETER ZODAC

IT HAPPENED IN MEXICO!

On his recent six-months tour of Mexico, Mr. E. M. Marshall, of Bethel, Conn., had many unusual experiences. For one thing he ultimately had trouble with his car as he deliberately abandoned the paved highways in order to see that section never seen by tourists. Consequently the rough mountain roads almost ruined the light car, Model A Ford, which he had purposely chosen for the trip.

He approached, one day, a mountainous village where he wished to have a badly bent wheel straightened out. Inquiring for a mechanic (Mr. Marshall speaks Spanish), he was directed to a combination of mechanic-blacksmith-and whose shop was nearby. The damaged wheel was soon off the car and on the floor. Lusty poundings by a sledge rattled the building so much, and seeing daylight through cracks in the floor, that it gave Mr. Marshall a feeling all was not well. Looking out of a rear window, his face paled. His feelings were fully justified as the building was found to be perched over a precipice more than 1,000 feet deep—in fact less than one-half of the building was on firm ground. Remonstrating with the native over the precarious position of the shop produced only a shrug and the smiling reply—"The floor never needs sweeping."

Later in the trip, as he was approaching another small village, the damaged wheel gave way altogether and was beyond repair. The spare wheel was gone, it was 50 miles to the nearest town where a check could be cashed, another wheel purchased and he had only $5.00 to get there which was needed for gas. To add to his dilemma, he had no friend nor acquaintance in the whole district. An ordinary collector would have been appalled by such a situation, but not Mr. Marshall. He just walked on to the village and began inquiring of the natives if any one in the community had a car similar to his which he described. He learned that the doctor had the only car in the community To him went Mr. Marshall and nonchalantly asked for the loan of one of its wheels in order that he might continue to the next city where a new wheel could be purchased and the loaned one shipped back. Never having seen Mr. Marshall before, nor knowing who he was and not at all taken aback by the strange request, the doctor very graciously and cordially allowed him to take a wheel.

Maybe Mexico is not half as bad as she is painted!

Willy Hirsch

It is with deep regret that we announce the death of Dipl. Ing. Willy Hirsch who passed away Aug. 14, 1939, in La Paz, Bolivia. For many years Mr. Hirsch was a mineral dealer in Munich, Germany, but in May of this year he was forced to leave that country due to religious persecution. He reached Bolivia, practically penniless, only to die about three months later, at the Clinica Americana, in La Paz, of plerosis of the brain.

Mr. Hirsch was a member of the Rocks and Minerals Association since Feb. 6, 1929.

WITH OUR MEMBERS

Frank W. Hess, of Springfield, Mass., visited the pegmatite area of eastern Canada, last August, where he collected a large number of interesting specimens.

A. Joseph Alessi, formerly of Chicago, now resides in Lombard, Ill. If any minerals are to be found around Lombard, Mr. Alessi will find them; he has a knack for finding minerals where one would never suspect them to be present.

Jay L. Smith, of Chester, N. Y., returned home early in September from a trip through the Central States where a number of localities and museums were visited. The fluorite mines at Rosiclare, Ill., and the limestone quarry at Clay Center, Ohio, were but two localities where stops were made and specimens collected.

Wm. H. H. MacKellar, of Peekskill, N. Y., who travels extensively over this beautiful country of ours, has a hobby which meets with our warm approval. It is the collection of post cards bearing pictures of rock formations but—he does not keep these cards. He mails them regularly to your Secretary. During the past three years we must have received at least 100 cards, from all over the country and—no two are alike.

Arthur Jones, of Brooklyn, N. Y., called at the offices of Rocks and Minerals Association, sometimes last August, and presented us with some very fine specimens of rock crystal on crystallized dolomite on limestone which he collected at a limestone quarry in Saratoga Springs, N. Y. New York State may not be very large in area but it can produce some mighty fine mineral specimens. But then, good things come in small packages! No wonder we are proud of the Empire State!

Ray D. Stratton, formerly of Superior, Nebr., is now located at Billings, Mont. Mr. Stratton is in the advertising business.

John C. Pohl, Jr., of Easton, Penn., has added a large number of minerals to his already large and very fine collection. Mr. Pohl travels extensively, buys liberally, and being a most courteous and friendly gentleman, a visiting collector when calling on him has the most enjoyable time imaginable.

Paul VanderEike, of Junior College, Bakersfield, Calif., is the new editor of *Mineral Notes and News*, the official bulletin of the California Federation of Mineralogical Societies. Congratulations, Mr. Editor! Our best wishes are extended to you!

J. P. von Lackum, of Waterloo, Iowa, recently purchased an Estwing pick hammer and was so pleased with its beauty and workmanship that the very day it arrived he sent in his check for another one. "I will not enjoy the use of this fine hammer until another one is obtained for the use of my family who are all enthusiastic collectors and appreciate good tools," he writes.

Gilbert W. Withers, of Atlanta, Ga., spent three weeks of August visiting mineral localities in North Carolina and northern Georgia. He reports calling on several members of the Association, in addition to visits to localities where many fine minerals were collected.

Miss Ruth de Persia, of Washington, D. C., was a recent visitor in Canada. A number of museums, mines and quarries were on her itinery but how many were visited and what collected she has not informed us as yet.

Frank P. Atkins, Jr., author of "A Trip to Gouverneur, N. Y." which appeared in last month's issue of ROCKS AND MINERALS, is now enrolled at the University of Cincinnati where he will do graduate work in geology.

Peekskill Emery in Demand

Considerable interest is now being manifested in the emergy deposits around Peekskill, N. Y., and indications are that mining operations on a large scale may soon be commenced. An official of one of America's largest emery grinding mills was a recent visitor to the area, making contacts and examining deposits, preparatory to placing a large order.

If a specimen isn't worth labelling it isn't worth keeping.

BIBLIOGRAPHICAL NOTES

Mining Industries and Statistics of the Province of Quebec for the year 1937. 135 pp. 4 plates, 1 fig.

Products of the mines and quarries of the Province of Quebec, during 1937, had a value of $65,203,976, an increase of $15,447,991, or 31% over 1936. Gold, in the value of nearly $25,000,000 easily maintained the leading position it has held since 1931.

Published by the Bureau of Mines, Quebec, Canada.

The Mining and Quarry Industries of New York State for 1934 to 1936: By D. H. Newland and C. A. Hartnagel. New York ranked 12th among the states of the Union in 1936 in the value of its mineral production which amounted to $77,160,427. This was an increase of 31% over the 1935 output, which was $58,946,452. (In the *Value of Mineral Products of the United States* released by the U.S. Bureau of Mines, the production for New York for 1936 is given as $71,647,775).

Issued by the Univerity of the State of New York, Albany (1939), 158 pps., 3 sketch maps.

Biographical Notices of Mineralogists Recently Deceased. By L. J. Spencer, C.B.E., M.A., Sc.D., F.R.S. This is the 7th series and covers a list of thirty lives, with a range in ages from 32 to 93 years, the average age being 72.7 years. The deceased mineralogists were from Australia, Canada, England, France, Germany, Italy, Russia, and the United States.

Reprinted from the Mineralogical Magazine, London, June, 1939, Vol. XXV, No. 165, pp. 283-304, Oxford University Press, Amen House, Warwick Square, London, E.C.4, England.

Annual Report of the Quebec Bureau of Mines (1936)—Part C. Lachute Map Area. The report is written in three parts. Part 1, by Dr. F. Fitz Osborne, describes the general and economic geology of the area; Part 2, by Dr. H. W. McGerrigle, is a description of the Lowland Area; Part 3, also by Dr. Osborne, describes the magnesitic-dolomite deposits of Grenville Township. 91 pp., 5 plates, 3 maps. Issued by the Quebec Bureau of Mines, Quebec, Canada.

Directory of Wyoming Mineralogists: The State of Wyoming is becoming mineral conscious and collectors are springing up everywhere. This is due in part to many interesting articles on Wyoming minerals which have appeared in state and national publications of which ROCKS AND MINERALS is one. But it is to Mr. C. S. Dietz, of Cheyenne, that Wyoming collectors are especially indebted. Long a leader in the field of mineralogy and a popular lecturer on the subject, Mr. Dietz, who has traveled extensively throughout the state and contacted thousands of its citizens, has been the chief reason for the enthusiasm and keen interest manifested in minerals.

At the request of the State Planning and Water Conservation Board, of Cheyenne, Wyo., Mr. Dietz has prepared a directory of Wyoming mineralogist. The first edition of 9 pages came out July 1, 1939.

The Helt Township (Indiana) Meteorite: By Stuart H. Perry. A small but interesting meteorite was found in Helt Township, Vermillion County, Indiana, by a farmer, named Frist, in 1883 or 1884, who saw it fall and heard the explosion as he was walking from his barn to his house between nine and ten o'clock in the evening. The next day he examined his fields and found a place of fresh earth that looked as if a small blast of explosive had been discharged—a sort of ragged opening like a small post-hole. Upon excavating he found the meteorite which was later acquired by John Collett, State Geologist of Indiana from 1878 to 1885. After the death of Mr. Collett, in 1899, the meteorite, together with his mineral collection, was purchased in 1915 by William J. Seaver, a mineral dealer of Webster Groves, Mo. In 1927 Seaver sold the meteorite to Mr. Perry, in whose collection it still remains. Published by the Smithsonian Institution, Publication 3546, Aug. 28, 1939, Washington, D. C., 7 pp., 9 plates.

If you can't write plainly, then print or type your labels. Only you can read your own scribbling.

EARNEST A. SOUTHWICK

Nov. 24, 1875 — July 26, 1939

It is with much sorrow that we have to report the death of Earnest A. Southwick who passed away at his home, at 315 S. E. 8th Ave., Portland, Ore., on Wed., July 26, 1939, after a long illness.

Mr. Southwick was born in Riley, Kans., on Nov. 24, 1875. The early years of his life were spent in Great Falls, Whitefish, and Libby, Mont., where he owned and published papers. He was president of the Great Falls Typographical Union and was one of the first to operate a linotype machine. Before leaving Montana, Mr. Southwick was mayor of Libby for two years.

The last 23 years of his life, Mr. Southwick spent in or near Portland, Ore., where again he published newspapers. In 1915 he became associated with the old Columbia Printing Co., which later was reorganized and called the Southwick Press. In 1928 he sold his interest in the firm and purchased a linotype plant which he operated until he became ill in 1938.

Mr. Southwick was a member of the Rocks and Minerals Association since July 23, 1934, during which time he not only obtained for us a number of new members but contributed some interesting articles to ROCKS AND MINERALS and donated many interesting specimens from his large and very fine collection. He may be more intimately remembered by our members as a regular advertiser in ROCKS AND MINERALS.

Survivors include the widow, Mary; a son, Earnest A., Jr., of Portland; a daughter, Mrs. Alice E. Richmond, of Honolulu; three brothers, Charles A., of Portland; G. W. of Milwaukee; and J. J. of Fresno.

Final rites were under the auspices of the Masonic lodge and interment in the Lincoln Memorial Park.

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FAMOUS DIAMONDS OF THE WORLD
Tells the dramatic histories of these gems, many of which have actually made history.
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October 28
THE COLORED PRECIOUS STONES
Deals with the Ruby, Sapphire, Emerald, Opal and Chrysoberyl, and tells where and how some of them have been made artificially.
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November 4
THE SEMIPRECIOUS STONES
Includes such gem stones as Topaz, Garnet, Tourmaline, Zircon, Peridot and Amethyst in their many varieties.
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